VERSION OF AMENDMENTS WITH CHANGES SHOWN:

IN THE SPECIFICATION

Please replace the paragraph beginning at page 4, line 5 with the following:

A third technique, one that is used in the [Pentium™] PENTIUM® and [Pentium Pro™] PENTIUM PRO™ series of microprocessors available from Intel Corporation, provides a special "probe mode" of operation of the processor. When the processor is placed in this probe mode, a number of internal signals are routed to a "debug port" for use by the in-circuit emulation system. This debug port is used to permit the in-circuit emulation system to communicate with the processors at all times and, when placed in probe mode, to read otherwise inaccessible probe points within the processor. Of course, providing such a probe mode requires significant design resources to design in all such probe and debug functions and associated instruction code support into the standard processor. This, of course, increases development cost, chip complexity and chip size. Moreover, such facilities become a part of the processor design which must be carried through and updated as required as enhancements to the original design are developed.

Please replace the paragraph beginning at page 8, line 23 with the following:

A commercial ICE system utilizing the present invention is available from Cypress [Micro Systems,] MicroSystems, Inc., for the CY8C25xxx/26xxx series of microcontrollers. Detailed information regarding this commercial product is available from Cypress [Micro Systems,] MicroSystems, Inc., 22027 17th Avenue SE, Suite 201, Bothell, WA [98021Bothell, WA] 98021, in the form of version 1.11 of ["PSoC Designer:] "PSOC DESIGNER: Integrated Development Environment User Guide", which is hereby incorporated by reference. While the present invention is described in terms of an ICE system for the above exemplary microcontroller device, the invention is equally applicable to other complex circuitry including microprocessors and other circuitry that

is suitable for analysis and debugging using in-circuit emulation. Moreover, the invention is not limited to the exact implementation details of the exemplary embodiment used herein for illustrative purposes.

Please replace the paragraph beginning at page 9, line 6 with the following:

Referring now to **FIGURE 2,** an architecture for implementation of an embodiment of an ICE system of the present invention is illustrated as system 200. In system 200, a Host computer 210 (e.g., a personal computer based on a [Pentium™] PENTIUM® class microprocessor) is interconnected (e.g., using a standard PC interface 214 such as a parallel printer port connection, a universal serial port (USB) connection, etc.) with a base station 218. The host computer 210 generally operates to run an ICE computer program to control the emulation process and further operates in the capacity of a logic analyzer to permit a user to view information provided from the base station 218 for use in analyzing and debugging a system under test or development.

Please replace the paragraph beginning at page 10, line 1 with the following:

The FPGA of the base station 218 of the current embodiment is designed to emulate the core processor functionality (microprocessor functions, Arithmetic Logic Unit functions and RAM and ROM memory functions) of the Cypress MicroSystems CY8C25xxx/26xxx series microcontrollers. The CY8C25xxx/26xxx series of microcontrollers also incorporates I/O functions and an interrupt controller as well as programmable digital and analog circuitry. This circuitry need not be modeled using the FPGA 220. Instead, the I/O read information, interrupt vectors and other information can be passed to the FPGA 220 from the microcontroller 232 over the interface 226 as will be described later.

Please replace the paragraph beginning at page 10, line 29 with the following:

In the designing of a microcontroller <u>or</u> other complex circuit such as the microcontroller 232, it is common to implement the design using the [Verilog™] <u>VERILOG®</u> language (or other suitable language). Thus, it is common that the full functional design description of the microcontroller is fully available in a software format. The base station 218 of the current embodiment is based upon the commercially available [Spartan™] <u>SPARTAN®</u> series of FPGAs from Xilinx, Inc., 2100 Logic Drive, San Jose, CA 95124. The [Verilog™] <u>VERILOG®</u> description can be used as the input to the FPGA design and synthesis tools available from the FPGA manufacturer to realize the virtual microcontroller 220 (generally after timing adjustments and other debugging). Thus, design and realization of the FPGA implementation of an emulator for the microcontroller (virtual microcontroller) or other device can be readily achieved by use of the [Verilog™] <u>VERILOG®</u> description along with circuitry to provide interfacing to the base station and the device under test (DUT).

## <u>SUPPORT FOR AMENDMENTS</u>

Support for the amendments herein can be found throughout the specification as originally filed. The present amendment intends to clarify references to trademarks of Cypress MicroSystems, Inc. and others (see, e.g., M.P.E.P. § 608.01(v) and the attached printouts from <u>http://tess.uspto.gov/</u>, notably the "PENTIUM," "VERILOG" and "SPARTAN" trademark registration information therein, and <u>http://www.cypressmicro.com/corporate/CY_Announces_nov_13_2000.html</u>). No new matter is introduced.
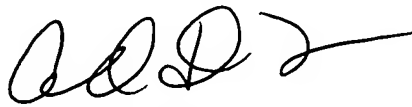
## REMARKS

Claims 1-20 are presented for consideration in the present application, which is now believed to be in condition for examination. Early notice to that effect is earnestly solicited.

Respectfully submitted,

WAGNER, MURABITO & HAO LLP

Anthony C. Murabito
Registration No. 35,295

Andrew D. Fortney, Ph.D.
Registration No. 34,600

Two North Market Street
Third Floor
San Jose, California 95113
(408) 938-9060
ADF/adf